

Page 13, line 6, after "through" insert --an injection or--;

line 13, after the word "out" insert --via pump--;

line 14, after the number "10" insert --and line 5--.

Page 14, line 1, delete the "," after the number "4";

line 5, delete "was" and insert --has--;

line 8, after the word "tank" insert --30--;

line 9, delete "30".

Page 15, line 14, delete "a".

## IN THE CLAIMS

Please amend the claims as follows:

Claim 2, line 1, after the word "the", second occurrence, insert --liquid--;

line 2, after the word "the", insert --liquid--.

Claim 6, line 2, after the word "the", insert --liquid--.

Claim 10, line 1, after the word "halide" insert --vapor--.

line 2, before the word "alkali" insert --liquid--.

Claim 18, line 4, after the word "alkali" insert --metal--.

Please add claims 21-40.

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A6

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--21. A method of producing an elemental material or an alloy thereof from a halide vapor of the elemental material or a mixture of halide vapors of two or more elemental materials comprising the steps of introducing the halide vapor or mixture of halide vapors into a reaction zone into the interior of a flowing stream of a liquid alkali metal, two or more liquid alkaline earth metals, or any mixture thereof; intimately mixing the halide vapor or mixture of halide vapors with the flowing stream to cause a

reduction reaction therebetween and form the elemental material or alloy thereof and a  
B ~~salt~~ of the alkali metal, two or more alkali metals, alkaline earth metal, two or more  
alkaline earth metals or any mixture thereof; and separating the elemental material or  
alloy thereof from the salt.

22. The method of claim 21, wherein the temperature of the elemental material  
or alloy does not exceed its sintering temperature.

23. The method of claim 21, wherein the elemental material is one or more  
members selected from the group consisting of Ti, Al, Sb, Be, B, Ga, Mo, Nb, Ta, Zr, V,  
Ir, Os, Re and U.

24. The method of claim 21, wherein said alkali metal is at least one member  
selected from the group consisting of Na, K and Li and said alkaline earth metal is at  
least one member selected from the group consisting of Ca, Sr and Ba.

25. The method of claim 21, wherein the halide is one or more members  
selected from the group consisting of Cl, Br and F.

26. The method of claim 21, wherein the halide vapor is mixed with an inert  
gas.

27. The method of claim 26, wherein said inert gas is He or Ar.

28. In a method of producing an elemental material or an alloy thereof in  
which a halide vapor of the elemental material or a mixture of halide vapors of two or  
more elemental materials are reacted with a liquid alkali metal, two or more liquid alkali  
metals, a liquid alkaline earth metal, two or more liquid alkaline earth metals, or any  
mixture thereof to form the elemental material or alloy thereof, the improvement  
comprising commencing the reaction between the halide vapor or mixture of halide

vapors and the liquid alkali metal, two or more liquid alkali metals, alkaline earth metals, two or more alkaline earth metals, or any mixture thereof, at the interior of a flowing stream of the liquid alkali metal, two or more liquid alkali metals, alkaline earth metal, two or more alkaline earth metals, or any mixtures thereof.

29. The method of claim 28, wherein the temperature of the elemental material or alloy thereof does not exceed its sintering temperature.

30. The method of claim 28, wherein the elemental material is one or more members selected from the group consisting of Ti, Al, Sb, Be, B, Ga, Mo, Nb, Ta, Zr, V, Ir, Os, Re and U.

31. The method of claim 28, wherein said alkali metal is at least one member selected from the group consisting of Na, K and Li and said alkaline earth metal is at least one member selected from the group consisting of Ca, Sr and Ba.

*Al*  
32. The method of claim 28, wherein the halide is one or more members selected from the group consisting of Cl, Br and F.

33. The method of claim 28, wherein the halide vapor is mixed with an inert gas.

34. The method of claim 33, wherein said inert gas is He or Ar.

35. A method of producing an elemental material of Ti, Al, Sb, Be, B, Ga, Mo, Nb, Ta, Zr, V, Ir, Os, Re and U or an alloy thereof from a halide vapor of the elemental material or mixtures thereof comprising introducing the halide vapor or mixtures thereof into a liquid continuum of alkali metal or liquid earth metal or mixtures thereof to convert the halide vapor to elemental material or an alloy wherein the liquid continuum <sup>of</sup> is present in sufficient quantity to maintain the temperature <sub>A</sub> substantially all of the